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PATENT  
Customer No. 22,852  
Attorney Docket No. 04329.2553

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
Masaaki HATANO, et al. ) Group Art Unit: 2827  
Serial No.: 09/816,177 ) Examiner: Mitchell, James M.  
Filed: March 26, 2001 )  
For: SEMICONDUCTOR DEVICE )

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. § 1.97(c)**

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(c), Applicants bring to the attention of the Examiner the document listed on the attached PTO-1449 form. Applicants file this Information Disclosure Statement (IDS) after the period set forth in 37 C.F.R. § 1.97(b), but before the mailing date of either a Final action, Quayle action, or a Notice of Allowance, to the undersigned representative's knowledge at the time of filing this IDS. This IDS supplements the IDS filed April 2, 2004.

Under the provisions of 37 C.F.R. § 1.97(c), this Information Disclosure Statement includes the following certification as specified by Section 1.97(e): The documents listed in this Supplemental Information Disclosure Statement were first cited in an Office Action mailed by the Japanese Patent Office on April 27, 2004 in counterpart foreign Application No. 2000-

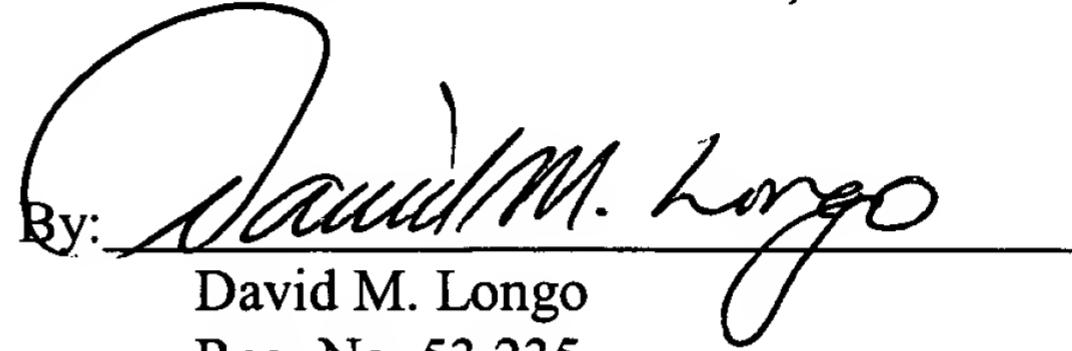
Application Number: 09/816,177  
Filing Date: March 26, 2001  
Attorney Docket Number: 04329.2553

If there is any fee due in connection with the filing of this Statement, please charge the  
fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: June 15, 2004

By:   
David M. Longo  
Reg. No. 53,235

(Translation)

Mailed: April 27, 2004

## NOTIFICATION OF REASONS FOR REJECTION

Patent Application No.: Japanese Patent Application No. 2000-086383

Examiner's Notice Date: April 21, 2004

Examiner: Ken HASEYAMA 9171 4M00

Attorney for Patent Applicant: Takehiko SUZUYE (other 6 attorneys)

Applied Sections and Paragraphs: Section 29 (1) and Section 29 (2)

This application is rejected on the grounds stated below. Any opinion about the rejection must be filed within 60 DAYS of the mailing date hereof.

### REASONS

1. The inventions according to the following claims of the present application are unpatentable under Section 29 (1) (iii) of the Patent Law as being described in the following publications distributed in Japan or a foreign country prior to this application.
2. The inventions according to the following claims of the present application are unpatentable under Section 29 (2) of the Patent Law, as being such that the invention could easily have been made by a person with ordinary skill in the art to which the invention pertains, on the basis of the invention described in the following publications distributed in Japan or a foreign country prior to this application.

### REMARKS (refer to references cited)

- Claims 1 and 3
- Reasons 1 and 2
- Reference 1
- Remark

The inventions according to the above claims are equivalent to a case in which, in a structure described in FIG. 50 of Reference 1, 13L1 is formed by WN (refer to paragraph [0190]), and 13L2a is formed by W, respectively.

- Claims 1, 3, and 4

amendment, the Applicant should assert the reason(s) why amendment is legitimate with respect to each matter of amendment in an Amendment after explicitly indicating descriptive portion(s) of the originally filed specification or the line which forms a basis for such amendment. (Reference is made to a descriptive form of a Written Request for Correction for a descriptive form of the Argument.)

For inquiry of this Official Notice of Reasons for Rejection, please contact the following:

Ken HASEYAMA, Semiconductor Device, Patent Examination Department 3  
Phone: 03-3501-1867  
Fax: 03-3501-0673

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Prior Art Search Report

Searched Field: IPC seventh ed.

H01L21/28 - 288, H01L21/44 - 445, H01L29/40 - 47, H01L29/872  
H01L21/3205, H01L21/3213, H01L21/768

The result of this prior art search does not constitute the reasons for rejection.

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- Remark 2
- References 1 and 2
- Remark

In Example 3 (Paragraphs [0060] to [0075]) of Reference 2, there is described a technique of inserting an intermediate layer made of TiN and Ti between Cu and Al in order to prevent reaction between Cu and Al, and provide a laminated structure of "Cu film (32) → TiN/Ti laminated film (7) → Al film (5)" from a lower layer. Thus, it is not deemed to have a remarkable inventive step in ensuring that a barrier film in the structure described in FIG. 50 of Reference 1 is formed of the laminated film of TiN and Ti.

References:

1. Jpn. Pat. Appln. KOKAI Publication No. 11-135630
2. Jpn. Pat. Appln. KOKAI Publication No. 8-17913

The claims not mentioned in this Official Action are not rejected. If a new reason for rejection is noticed, a further Official Action will be issued.

[Notes on Amendment]

- (1) In the case where the specification has been amended, underline(s) shall be drawn on portion(s) at which description(s) has been changed due to such amendment (Form 13, Remark 6 of the Regulations under the Patent Law).
- (2) Amendment must be made within the scope of obvious matter(s) from the matters described in the originally filed specification or accompanying drawings, in addition to the matters described in the originally filed specification or accompanying drawings of the present application. When making

## INFORMATION DISCLOSURE CITATION

Atty. Docket No. 04329.2553	Appln. No. 09/816,177
Applicant Masaaki HATANO, et al.	
Filing Date March 26, 2001	Group: 2827

## U.S. PATENT DOCUMENTS

Examiner O I Rinaldi*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
JUN 15 2004						

## FOREIGN PATENT DOCUMENTS

	Document Number	Publication Date	Country	Class	Sub Class	Translation Yes or No
	11-135630	May 1999	Japan			No
	8-17913	January 1996	Japan			No

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)


Examiner	Date Considered
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	
Form PTO 1449	Patent and Trademark Office - U.S. Department of Commerce

086383, and this Information Disclosure Statement is being filed within three months of the mailing date of that communication.

Copies of the listed documents are enclosed. In lieu of a statement of relevance or translation of the non-English documents, copies of the Japanese Patent Office Action for Application No. 2000-086383 dated April 27, 2004, and its English translation, citing those documents and setting forth the relevance thereof, are enclosed. Applicants respectfully request that the Examiner consider the listed documents and indicate their consideration by making appropriate notation on the attached PTO-1449 form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that the listed documents are material or constitute "prior art." If the Examiner applies either of the documents as prior art against any claims in the application and Applicants determine that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such document.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should either of the documents be applied against the claims of the present application.